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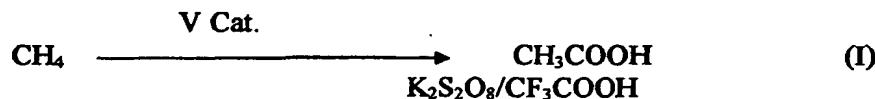
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(54) Title: CATALYSTS AND PROCESS FOR THE DIRECT CONVERSION OF METHANE INTO ACETIC ACID



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(57) Abstract: The invention consists on the utilization of complexes of vanadium (in the +4 and +5 oxidation states) with bi- or poly-dentate ligands coordinated by nitrogen and oxygen (N,O) or by oxygen and oxygen (O,O) atoms, namely derivatives of aminoalcohols, (hydroxyimino)dicarboxylic acids, hydroxypyranones, trifluoroacetic acid, triflic acid or inorganic acid, as catalysts for the direct single-pot conversion, under mild conditions, of methane in acetic acid, either in the absence or in the presence of carbon monoxide, and in the presence of a peroxodisulfate salt ($\text{K}_2\text{S}_2\text{O}_8$), in trifluoroacetic acid (CF_3COOH), according to the general reaction (I).